

USSR

UDC 621.396.6.004

VERLAN', A. F.

"Error Analysis of Electronic Simulation of Subjects Described by Integral Equations"

Kiev, Kibernetika i Vychislitel'naya Tekhnika, Tochnost' i Nadezhnost' Kiberneticheskikh Sistem, No 10, 1971, pp 9-13

Abstract: A study was made of means of analyzing the errors in reproducing a class of integral equations in electronic models. Equations are derived for the errors and influence coefficients. Both algorithmic and nonalgorithmic methods can be used to solve the equations used to describe linear nonstationary objects. The direct simulation (nonalgorithmic) method is chosen as the most efficient for use on an analog computer. Within this framework several means of obtaining information about the errors in solving integral equations on analog computers are investigated. The derived expressions can be used as the basis for deterministic estimates and for probability error analysis.

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USSR

BOOK

352

UDC 517.4.001.57

VERLAN', A. F., and YEVDOKIMOV, V. F.

Elektronnoye Modelirovaniye Peredatochnykh Funktsiy (Electronic Simulation of Transfer Functions), Kiev, "Tekhnika," 1971, 232 pp, illus, biblio 103 titles, 3,700 copies printed.

Translation of Annotation:

The book deals with problems involving the development and use of methods of electronic simulation of transfer functions. Basic data are presented from the mathematical apparatus of transfer functions; hardware and software for simulating fractional-rational transfer functions are described as well as a number of procedures for deriving and modeling approximating expressions for irrational and transcendental transfer functions. Consideration is given to applications of the described procedures for studying objects and systems with distributed parameters and for solving certain partial differential, integral, and transcendental equations. The book is intended for specialists in the area of analog computer technology and automatic control, scientific workers and engineers engaged in the study of the dynamics of various systems, and also for students majoring in related fields.

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Computers: Applications & Programming

USSR

UDC 681.142.33

VERLAN', A. F.

Metody Resheniya Integral'nykh Uravneniy na Analogovykh Vychislitel'nykh Mashinakh (Methods of Solving Integral Equations on Analog Computers), Kiev, "Naukova Dumka," 1972, 219 pp

Abstract: This book examines nonalgorithmic and algorithmic methods of solving Volterra's and Fredholm's equations, as well as certain types of integrodifferential equations, on analog computers. Nonalgorithmic methods and models are described as applied to equations of the Volterra type used for solving many problems in dynamics. Algorithmic methods are used for solving Fredholm's and Volterra's equations. It is shown that the methods described can be used both for constructing specialized computers and devices and for solving integral equations on serially produced analog computers.

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VERLAN', A. F., Metody Resheniya Integral'nykh Uravneniy na Analogovykh Vychislitel'nykh Mashinakh, Kiev, 1972

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VERLAN', A. F., Metody Resheniya Integral'nykh Uravneniy na Analogovykh Vychislitel'nykh Mashinakh, Kiev, 1972

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DEM'YANENKO, V. P.; TSYASHCHENKO, Yu. P.; VERLAN, E. M. (Kiev State University)

"Infrared Absorption of the Complex $\text{CrO}_4^{2-} \cdot \text{M}^{2+}$ in KCl and KBr Crystals"

Leningrad, Solid State Physics; November, 1970; pp 3124-32

ABSTRACT: The infrared absorption spectra of KCl and KBr crystals alloyed with CrO_4^{2-} ions and cations $\text{M}^{2+} = \text{Mg}^{2+}, \text{Sr}^{2+}, \text{Ba}^{2+}, \text{Pb}^{2+}$ were studied in the 100-300°K temperature interval. These impurities form complexes of symmetry C_{2v} , causing disintegration of the triply degenerate valence oscillation ν_2 and the appearance of completely symmetrical oscillation ν_1 of the CrO_4^{2-} ion.

The frequencies in the infrared spectra of these complexes are given, and a comparison of them is made depending on the form of the M^{2+} cation.

From the data on the integral absorption of the complexes of a triplet oscillation ν_3 are evaluated the magnitudes of the charges localized on atoms of oxygen and chromium from a CrO_4^{2-} ion excited by an M^{2+} cation.

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SPRS 69208
6-73

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11-11. GROWTH DIRECTION OF THE PURE AND ALLOYED SINGLE CRYSTALS OF ZINC
TELLURIDE

[Article by V. I. Verlan, S. I. Radutsan, A. Ya. Tuglani, Novosibirsk, III
Simpozium po Fizicheskoi Khimii i Stokovoi Poluprovodnikovoi Kristallografii
Russskoi, 12-17 June, 1972, p 33]

The study of the directional growth of crystals was made in sealed quartz ampoules with graphite containers with a quartz jacket. The crystals were grown in a monocrystalline acid bath from the vapor phase by the fiber method and from a melt by the directional crystallization method. The studies were made for different constant vapor pressure of zinc or tellurium and also with cesium, lithium or phosphorus additives present in the melt as the alloying admixture. It was established that for a zinc or tellurium vapor pressure above the equilibrium pressure the crystals are oriented by the (111) of the plane (111) for which there is a favorable possibility of growth. The crystallographic orientation of the predominant growth direction (111) has been studied for deviation from the stoichiometry. It has been demonstrated that with excess zinc vapor pressure above the melt the crystal is oriented by the (111) plane in the direction of the melt. The presence of one of the indicated admixtures in the melt with equilibrium pressure of the components leads to preferable orientation in the melt of the plane (111) in. The growth mechanism of crystals of the given compound has been studied. It is demonstrated that the crystallization process in the direction of the predominant growth is determined by the crystallographic ratio between the transient layer at the phase interface. The structure of the transition layer depends on the supercooling of the melt (vapor) at the crystallization front, and it is determined by the electron structure of the melt atoms.

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--BRAIN ELECTRICAL ACTIVITY IN THE SHERESHEVSKY TURNER SYNDROME AND
MOSAICISM -U-
AUTHOR-(02)-GODINOVA, A.M., VERLINSKAYA, D.K.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 6, PP 873-879
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ELECTROENCEPHALOGRAPHY, BRAIN, SYNDROME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0189 STEP NO--UR/0246/70/070/006/0873/0879
CIRC ACCESSION NO--AP0127807
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REPORT CONCERNS AN ELECTROENCEPHALOGRAPHIC STUDY OF 34 PATIENTS (5 MOSAICS) WITH THE SHERESHEVSKY TURNER SYNDROME FROM THE AGE OF 7-32. THIS GROUP CONSISTED OF 21 GIRLS (2 MOSAICS) YOUNGER THAN 16 YEARS. THE DIAGNOSIS WAS ESTABLISHED PHENOTYPICALLY AS WELL AS BY KARYOLOGICAL DATA (AN ABSENCE OF SEX CHROMATINE, A DISTORTION OF THE SET OR THE EXISTENCE OF STRUCTURAL ANOMALIES OF THE SEX CHROMATINE). THE EEG IN MOST OF THE CASES WAS CHARACTERIZED BY A HOMOTYPICITY OF THE CURVES. THE MAIN ELECTRICAL ACTIVITY FELL ON THE BACKGROUND OF SLOW FLUCTUATIONS OF 1.5-3 SEC. IT WAS DESORGANIZED WITH A TENDENCY TO DESYNCHRONIZATION (RARELY TO A SYNCHRONIZATION), WITH A PREDOMINANCE OF FREQUENT LOW AMPLITUDE FLUCTUATIONS AN INCREASE OF SLOW WAVES IN THE THETA RHYTHM. THESE CHANGES WERE MORE STABLE AS THE PATIENTS GREW OLDER, WHILE AS THE EEG OF THE YOUNGER ONES HAD TRAITS OF AGE RETARDATION. IN MOSAICS THE EEG WAS RELATIVELY NORMAL. THESE STABLE CHANGES OF THE EEG WERE PARTIALLY CONFIRMED BY THE USE OF NEUROPHARMACOLOGICAL TESTS WITH AN ELECTIVE ACTION ON THE ADRENOREACTIVE STEM STRUCTURE AND MAY BE EXPLAINED AS A RESULT OF CORRESPONDING LOCAL CHANGES IN GENERALLY SOMATIC STRUCTURAL DISTURBANCES. FACILITY: LABORATORIYA MEDITSINSKOY GENETIKI AMN SSR, LENINGRAD.

UNCLASSIFIED

SSR

UDC 535.324+535.341]:539.238

USOSKIN, A. I., SHKLYAREVSKIY, I. N., GERCHIKOV, A. S., and VERLINSKIY, Yu. S

"The Optical Properties of Thin Films of Bismuth"

Leningrad, Optika i Spektroskopiya, Vol 34, No 5, May 73, pp 954 - 958

Abstract: Experimental studies were made of two groups of bismuth films. Films in the first group were precipitated in a vacuum at room temperature and then heated to 120°C, while those in the second group were deposited on a substrate heated to 120°C. Films in the first group were of a gray-blue color with transitions to yellowish at low thicknesses, while those in the second group were an intense yellow color. Each group includes films of different, precisely controlled thicknesses. The films deposited at room temperature could not be separated from the substrate, so they were deposited on materials that were transparent to the electron beam for electron microscopy. The two groups of films show a clear distinction in pattern, those in the second group maintaining large, distinct islands of bismuth even at high thicknesses, while the islands tend to run together in the first groups.

Visible light measurements were made to determine the indices of refraction and absorption of the films. Nominal values permitted the calculation of the imaginary and real components of the effective dielectric constant of the films.

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Usoskin, A. I., et al, Leningrad, Optika i Spektroskopiya, Vol 34, No 5, May 73, pp 954 - 958

These calculations yield both positive and negative roots. Special observations permitted the determination that the positive roots and the indices of refraction and absorption associated with them are valid for the thinner films, while the negative values are valid for thicker films. The transition comes when the two values of effective dielectric constant tend to be equal, that is when the expression under the radical in the formula for this value becomes zero; this thickness is greater for light of longer wavelengths.

The results indicate that as the islands of bismuth coalesce in films of the first group the properties approach those of much thicker films, while the films of the second group maintain fairly constant indices even when the thickness and the size of the islands change significantly (thickness 11 - 18 nanometers). The relevant values for various thicknesses and wavelengths are given in two tables.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--KINETIC STUDY OF THE ANTITUMOR ACTIVITY OF N-NITROSALKYLUREA IN
EXPERIMENTS -U-
AUTHOR--(04)-EMANUEL, N.M., VERMEL, YE.M., OSTROVSKAYA, L.A., KUKHARENKO,
YU.A.
COUNTRY OF INFO--USSR
SOURCE--INST. CHEM. PHYS., MOSCOW, USSR
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTINEOPLASTIC DRUG, UREA DERIVATIVE, NITROSO COMPOUND, DRUG ,
DOSAGE RESPONSE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/2043 STEP NO--UR/0506/70/016/003/0046/0054
CIRC ACCESSION NO--AP0117286
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITROSOMETHYLUREA, NITROSOETHYLUREA, OR NITROSOPROPYLUREA GIVEN S.C. TO MICE WITH ASCITES SARCOMA 180 OR EHRLICH TUMORS CHANGED THE PARAMETERS OF THE KINETIC EQUATIONS GOVERNING TUMOR GROWTH. NITROSOETHYLUREA WAS THE MOST EFFECTIVE, AND NITROSOPROPYLUREA THE LEAST EFFECTIVE, IN REDUCING THE GROWTH RATE. ALL 3 COMPOS. GREATLY INCREASED THE DOUBLING TIME OF THE TUMOR CELL POPULATION. A LARGE DOSE OF A DRUG GIVEN ONCE WAS MORE EFFECTIVE THAN MULTIPLE DOSES GIVEN IN SMALLER AMOUNTS.
FACILITY: INST. CHEM. PHYS., MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANTITUMOR, RADIOSENSITIZING AND RADIOPROTECTIVE PROPERTIES OF SOME
FLAVONOIDS IN RELATION TO THEIR STRUCTURE -U-
AUTHOR--(03)-KABIYEV, O.K., VERMENICHEV, S.M., AYAPBERGENOV, YE.K.
COUNTRY OF INFO--USSR
SOURCE--RADIOBIOLOGIYA. INFORM. BYUL. (RADIOBIOLOGY. INFORMATION
REFERENCE--RZH, BIOLOGICHESKAYA KHIMIYA, NO 6, MAR 70, ABSTRACT NO 6 F2570
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTITUMOR DRUG EFFECT, RADIATION SENSITIVITY, RADIOPROTECTIVE
AGENT, FLAVONOID COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1218 STEP NO--UR/0673/70/000/012/0033/0085
CIRC ACCESSION NO--AR0120062
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2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AR0120062

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEUKODELPHINIOIN, ONE OF THE LEUKOCANTOCYANIDINS, WAS FOUND TO POSSES THE GREATEST ANTITUMOR ACTIVITY. THE CATECHINS MANIFESTED RADIOSENSITIZING PROPERTIES. QUERCETIN EXHIBITED MODERATE ANTITUMOR BUT PRONOUNCED RADIOPROTECTIVE ACTION. THE DIFFERENCES IN THE ACTIVITY OF THE FLAVONOIDS SEEMS TO BE DUE TO THE PRESENCE OF DOUBLE BONDS AND TO THE NUMBER OF HYDROXY GROUPS WHICH BECOME MORE ACTIVE AS THEY INCREASE IN NUMBER. THE INDIVIDUAL HYDROXY GROUPS OCCUPY THE SAME POSITION IN THE COMPOUNDS STUDIED. THE LOW ACTIVITY OF RUTIN IS ATTRIBUTED BY THE AUTHORS TO THE SPECIFICITY OF THE SUGAR COMPONENT.

UNCLASSIFIED

USSR

UDC: 536.212.2:535.345.1

VERMOGRADSKIY, V. A., CHEKHOVSKOY, V. Ya.

"Heat-Physical Properties of Rhenium at High Temperatures"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 73, pp 84-87.

Abstract: The electrical resistivity, heat conductivity and integral hemispheric degree of blackness of polycrystalline rhenium are measured in the 1200-3000° K temperature interval. Purity of the specimens used was 99.98%. They were produced by methods of powder metallurgy in the form of wires 0.3 mm in diameter. The differences between the data produced in this work and the data of other authors is discussed. Causes for variations in data include faulty techniques used in some earlier works, differences in densities of materials tested, and anisotropy of the properties of rhenium single crystals, in combination with preferential orientation of crystals in polycrystalline specimens.

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VERNER, V.D.

Magnetics

1. CILINDROGRAPHIC DATA		2. Subject No.		3. Subject No.	
JPRS 59925		2		3	
4. TITLE					
ANNEALING OF THIN MAGNETIC FILMS AT HIGH TEMPERATURES					
5. DATE					
26 July 1973					
6. AUTHOR					
V.D. VERNER, S. I. ALITONOV					
7. INSTITUTION					
Joint Publications Research Service					
1000 North Glebe Road					
Arlington, Virginia 22201					
8. SUMMARY					
As above					
9. SOURCE					
13. Supplementary Notes					
MOSKOVSKIY INSTITUT ELEKTRONNOY TEKNIKI, No 9, 1972, Moscow					
14. ABSTRACT					
The report contains an investigation of the kinetics of the change in the electrical resistance of Ni-Fe two-layer films and Ni-Fe alloys of different composition during annealing in a magnetic field.					
15. SOURCE					
USSR					
Electronics					
Components					
Thin film					
Metallurgy					
16. IDENTIFICATION					
Specialized Terms					
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USSR

UDC 539.67

VERNER, V. D., FIGUZOV, Yu. V., and RZHEVSKAYA, I. Ya.

"Relaxation Spectrum of Molybdenum. Governed by Incorporation Impurities"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka", 1970, pp 61-65

Abstract: Results of an investigation are presented which make it possible to explain the complex relaxation spectrum in molybdenum with a substantial content of impurities.

A graphic resolution of a complex 220-degree peak, obtained in molybdenum with oxygen, nitrogen, and carbon additions, is presented.

The shape of the oxygen and carbon solubility lines in a solid molybdenum-based solution is refined and the true diffusion coefficients of these elements are determined. 2 tables, 5 figures, 3 references.

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USSR

UTC 621.378.3

BOBROVNIKOV, Yu. A., VERNIGOR, Ye. M., ZVEREV, G. M., LUK'YANETS, Ye. A.,
MARTYNOV, A. D., and KHRLOVA, O. P.

"Effective Conversion of the Second Harmonic of a Ruby Laser into Induced
Radiation in the 400-470 Millimicron Range in Stilbenyloxazole Solutions"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 2, Aug 70, pp 216-219

Abstract: Results are presented for an experiment conducted to study the laser-
induced radiation in alcohol solutions of stilbenyloxazoles. In the experiment
a 2.5 Mw ruby-laser beam was focused on the vessel containing the solution. The
induced radiation was recorded by means of the ISP-51 spectrograph. The wave
length of the induced radiation ranged from 400 to 470 millimicrons. The spectrum
width for alcohol is 2.5-3 times that produced in benzene. For all solutions
studied the radiation conversion factor is about 20%.

USSR

UDC: 621.3.014.4

VERNIGOROV, YU. N.

"The Possibility of Controlling Conducting Films Using the Eddy Currents"

Novocherkassk, Izvestiya vysshikh uchebnykh zavedeniy: Elektromekhanika, No 3, 1971, pp 332-334.

Abstract: The author studies the possibility of using the eddy current method for the contactless control of films directly during their deposition. The author proposes the deposition of an additional control area "sputnik" in the shape of a disc which is formed simultaneously during the deposition of the basic functional circuit. The "sputnik" is located in a variable magnetic field of a coil-data unit which is in turn located above (or below) the backing. The problem is formulated in the following way: find the value of the resistance introduced into the data unit for the data unit-controlling, conducting disc system as a function of the structural dimensions of the system, surface resistance of the film, and the frequency of the current in the data unit. The results show that the eddy current method can be used for the direct, contactless control of the surface resistance of low-resistance conducting films directly during their deposition. Engineering methodology is given for calculating the introduced, active resistance as a function of the parameters of the conducting disc-data unit electromagnetic system.

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VERNIGOROV, YU. M., Izvestiya vysshikh uchebnykh zavedeniy: Elektromekhanika, No 3, 1971, pp 239-248

The theoretical and experimental data do not diverge by more than 6 percent. The method significantly enhances the automatization of film circuit production. Original article: four figures, five formulas, and three bibliographic entries.

2/2

USSR

UDC 615.833-002-031.14-02 615.285.7

VERNIK, A. Ya., Chair of Neurology and Psychiatry, Petrozavodsk University

"Chlorophos Neuritis"

Moscow, Sovetskaya Meditsina, No 9, 1971, pp 44-46

Abstract: The following stages can be distinguished in the clinical picture of acute chlorophos poisoning: coma (day 1), severe visceral disturbances (days 2 and 3), psychomotor excitation (days 4 and 5), sense of well-being (days 7 to 16), and polyneuritis (from days 16 to 20). The onset of the polyneuritic stage is marked by pain in the extremities, dysfunction of the craniocerebral nerves, and progressive paralysis of the feet and hands, usually bilateral. The disease follows a long and severe course and has permanent aftereffects. The late onset of polyneuritis is thought to be due not only to the direct action of chlorophos on the motor neurons but also to impaired assimilation of the B complex vitamins resulting from toxic lesions of the liver. Neostigmine or other anticholinesterase agents should not be prescribed for polyneuritis induced by chlorophos. A detailed excerpt is presented from the case history of a 26-year-old man who while drunk swallowed about 200 g of diluted chlorophos to commit suicide.

1/1

USSR

UDC: 621.375:621.39(075.8)

KUSHNIR, T. V., SAVENKO, V. G., and VERNIK, S. M.

"Measurements in Communications Engineering; Textbook for Electrical Engineering Communication Institutes"

Svyaz' (Communications) 1970, 543 pp, illustrated, 1 ruble 38 kopeks (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A332A)

Translation: Contemporary methods and measurement procedures in electrical communications are systematically explained; requirements of measuring instruments are confirmed and methods of their realization are indicated. Fundamentals of the theory of measurement errors are given. Electromechanical instruments, voltage supplies, and methods of obtaining oscillograms of electrical oscillations are described. Separate chapters are devoted to measurements of current, voltage, power, frequency, phase difference and phase parameters, nonlinear distortions, modulation, intensity of the electromagnetic field, noise in communication channels, parameters of two-terminal networks and the attenuation of four-terminal networks, random process characteristics, measurements on communications lines, and the automation of measurements. The book is a textbook for students in the technical departments of VUZ communications schools. It can also be used in the practical work of engineers and technicians. Ten tables, 384 illustrations, bibliography of 11. Annotation

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USSR

UDC 621.382.002

VERNIKOV, M.A., VOROB'YEV, N.N., MARKOVA, T.A., ROSINA, L.A., SHCHEGLOV, A.S.

"Study Of The Effect Of Thermocompression Regimes On The Electrical Parameters Of Transistors"

Elektron.tekhnika.Nauch.-tekhn.sb. Poluprovodn.pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 161-166 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B526)

Translation: The study was conducted on planar silicon n-p-n transistors with an epitaxial base. The thermocompression regime was controlled by two parameters --the temperature and pressure at the wedge [igla], which were varied in the limits 320--590° C and 25--31.3 kg/mm², respectively. It is shown that an increase of the temperature and pressure at the wedge leads to a significant instability of the parameter h_{21E} in the course of 500-hour tests on reliability. The mechanism of the effect of remanent strains on the instability of h_{21E} is discussed. It is proposed first to set the temperature and pressure at the minimum level which assures a sufficient mechanical stability, and secondly to maintain the regime with a precision not worse than 5 percent. 4 ill. 17 ref.G.I.

1/1

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Nuclear Physics

USSR

UDC 537.591.1

VERNOV, S. N., GRIGOROV, N. L., LIKIN, O. B., LOGACHEV, Yu. I., PISARENKO, N.F.,
SAVENKO, I. A., VOLODICHEV, N. N., and SUSLOV, A. A., Scientific Research
Institute of Nuclear Physics, Moscow State University.

"Studies of Cosmic Radiation Aboard the Prognoz Satellites"

Moscow, Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, 1973, pp 1138-1143

Abstract: Two Prognoz satellites were launched in April and June of 1972 into orbits with the following parameters: apogee -- 200,000 kilometers, perigee -- 950 kilometers, angle of inclination 65° . The satellites were launched toward the sun, the angles between projections of the apsides and the orbit through the plane of the ecliptic and the direction of the sun being 22 and 23 degrees, respectively. The angle between projections of the apsides of the two satellites was 77° in July 1972. The satellites served about six months each. Although they were in orbit during the decline in the 11-year solar cycle, their first months of observation coincide with an anomalous increase in solar activity. Background radiation was almost never recorded in these months. From April through September 1972, interplanetary space was filled with intensive streams of solar protons at energies of about 1 Mev. Higher energy protons were observed only during the August flares. The electron flow

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USSR

VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, 1973, pp 1138-1143

was well correlated with the protons. Absorbed radiation dose during this interval, except for 2-7 August, was steady at approximately 24 mrad per day.

Calculations from the uniform nature of the declines in intensity of solar proton activity indicate that the absorbing layer is at a distance of approximately two astronomical units from the sun. It is remarkable that the state of interplanetary space remained the same over a long interval, in spite of substantial manifestations of solar activity; when perturbed, it recovered rapidly.

Increases in electron flow were observed several times without any corresponding increase in proton output, but every increase in proton output from the sun was accompanied by an increase in electron flow.

During intervals of low solar activity, the detectors which determined these correlations established a strong negative correlation between the counts of extra-solar protons at over 30 Mev and electrons under 500 kev.

The satellites recorded the intense solar activity of early August. An interesting phenomenon was the sharp increase in the flow of particles at all energies over the course of 2.5 hours early on 5 August. The peaks in the curves had particularly steep leading and trailing edges. It is theorized

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, pp 1138-1143

that this represented a magnetic "trap" with dimensions of approximately 0.1 au, traveling at approximately 2500 kilometers per second; the absence of any nucleons with $Z \geq 6$ indicates that the particles must all have been of solar origin.

3/3

UDC 612.122.1:612.59

USSR

VERNSHTEYN, V. A., and GORDIYENKO, G. P.

"Glycemia Fluctuations During the Hypothermy Process With and Without Narcosis"

Alma-Ata, Izvestiya Akademii Nauk Kazakh SSR, Seriya Biologicheskaya, 3,
May/Jun 71, pp 76-79

Abstract: The authors present a chart summarizing a wide range of results in the literature on the effect of hypothermy on hyperglycemia. In their own research they used 108 white male rats divided in three groups. For non-narcotized rats, blood glucose concentration (M \pm m) initially comprised 98 \pm 3; at 30 $^{\circ}$ -- 127 \pm 6; at 16 $^{\circ}$ -- 124 \pm 6mg%. For narcotized rats the corresponding figures were 93 \pm 6, 85 \pm 6, and 88 \pm 5 mg%. This data provides reliable evidence of a rise of glycemia during the development of hypothermy without narcosis and the complete suppression of this reaction on introduction of large doses of ganglion-blocking, neuroplegic, and narcotizing substances. The problem remains, however, concerning occasional references to hyperglycemia with hypothermy under narcosis, particularly in surgical patients. Apparently minute quantities of adrenalin can produce hyperglycemia without producing cardiovascular reactions. The level of glucose concentration in the blood can

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USSR

VERNSHTEYN, V. A., and GORDIYENKO, G. P., Izvestiya Akademii Nauk Kazakh SSR, Seriya Biologicheskaya, 3, May/Jun 71, pp 76-79

serve as a sensitive indicator of the degree to which protective reactions have been suppressed in the organism subjected to hypothermy.

2/2

USSR

UDC 621.375.826

PFAYFFER, M., ~~VERNKE, V.~~, LAU, A., VAYGMAN, KH. I., LENTS, K., GADOV, P.

"Procedure for Separating the Weak Lines of Forced Combination Scattering by Means of Selective Absorption on the Frequency of the Strongest Stokes Component"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), Moscow, No 5, 1971, pp 129-131 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D342)

Translation: In the presence of forced combination scattering, usually only the combination scattering component with the largest amplification coefficient appears in the spectrum. Its appearance causes such strong depletion of the intensity of the exciting laser that the other combination scattering signals cannot grow to the sensitivity threshold of the receiver. By selective absorption for the predominant Stokes component it is possible to facilitate the appearance of other combination scattering frequencies. It was theoretically demonstrated that when using an absorbing liquid for which the ratio of the absorption coefficient on the frequency of the first Stokes component and on the laser frequency of 100:1 is obtained, the detection threshold of the weak component can be reduced by 7 times. The bibliography has 5 entries.

1/1

USSR

UDC 621.791.1:546.26-162:546.821

KAZAKOV, N. F., KRYUCHKOVA, V. P., ZAZOVSKIY, D. G., and VERNYI, V. A.

"Graphite and Titanium Diffusion Welding in a Vacuum"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 70-71

Abstract: Results are given of experiments designed to ascertain the optimal modes of welding titanium to graphite. Specimens of the two original metals measured 80 x 50 x 20 mm for Ti and 50 x 50 x 20 mm for the graphite, and were welded together in the SDVU-8M diffusion vacuum machine at a temperature of 1100° C obtained from an LZ-67 high-frequency oscillator with an output power of 60 kW and a frequency of 60-74 kHz. The temperature was controlled by a KHA thermocouple. Metallographic analysis after the welding process was completed showed that complete melting occurred at the point of contact of the metals, and that damage resulting from the mechanical testing was restricted to the graphite. The low resistance to a d-c current passed through the weld indicated its high quality.

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- 68 -

1/2 010
UNCLASSIFIED
TITLE--PROPARGYL ETHERS FROM 9,10,DIHYDRO,EXO,DICYCLOPENTADIENE -U-
PROCESSING DATE--20NOV70
AUTHOR--(04)-YASHINA, D.G., GAVRILOVA, L.D., RUDNEY, S.A., VERSHCHAGIN,
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 971-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CONDENSATION REACTION, ALKYNE, AROMATIC HYDROCARBON, ETHER,
CARBOXYLIC ACID CHLORIDE, FORMALDEHYDE, BROMINATED ORGANIC COMPOUND,
CHLORINATED ORGANIC COMPOUND, AMINE DERIVATIVE, HYDROGENATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1319
STEP NO--UR/0366/70/006/005/0971/0975
CIRC ACCESSION NO--AP0134993
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APOL34993

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE PRESENCE OF BF SUB3. ET SUB2 O, HC TRIPLE BOND CCH SUB2 OH CONDENSED WITH DICYCLOPENTADIENE GIVING 9,PROPARGYLOXY,2,10,DIHYDRO,EXO,DICYCLOPENTADIENE (I). THE HYDROGENATION OF I GAVE 9,PROPOXY,I ANALOG. THE REACTION OF I WITH ACCL GAVE 9,CHLORO ANALOG OF I. I WAS ALSO PREPD. FROM ITS 9-HYDROXY ANALOG BY THE REACTION WITH BRCH SUB2 C TRIPLE BOND CH IN THE PRESENCE OF NA. THE CONDENSATION OF I WITH ALKYLAMINES AND HCHO GAVE THE 9,(RR PRIME NCH SUB2 C TRIPLE BOND CCH SUB2 O, SUBSTITUTED) ANALOG OF I.

FACILITY: INST. NEFTE UGLEKHIM. SIN., IRKUTSK, USSR.

UNCLASSIFIED

USSR

UDC 546.732-386.03+546.742-386.03

VERSHCHAGINA, T. Ya., VASHMAN, A. A.

"Spectroscopic, Magnetochemical and Relaxation Measurements of Co^{II} and Ni^{II} Complexes with Organophosphorus Ligands"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 162-168

Abstract: The methods of electron spectroscopy, magnetic suspension and spin echo in the phosphorus nuclei were used to study complexes of the nitrates of Co^{II} and Ni^{II} with tributyl phosphate, tributyl phosphinate and tributylphosphine oxide. The nature of the metal-ligand chemical bonds in the complexes formed during the process of extraction in aqueous solutions of organophosphorus compounds is discussed. The increasing order of degree of donor-acceptor metal-ligand bonding phosphate-phosphinate-phosphine oxide coincides with the increase in the extractive capacity of the extractants. However, water molecules are preferable coordinating ligands in mixed solvents.

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1/2 017
UNCLASSIFIED
TITLE—CLINICAL IMPORTANCE OF HISTAMINE CONTENT DETERMINATION IN THE BLOOD
OF PATIENTS WITH INFECTIOUS HEPATITIS —U—
AUTHOR—VERSHENYA, M.I.
COUNTRY OF INFO—USSR
SOURCE—ZDRAVOOKHRANENIYE BELORUSSII, 1970, NR 2, PP 57-60
DATE PUBLISHED—70
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS—HEPATITIS, HISTAMINE, BLOOD
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—1990/1525
STEP NO—UR/0477/70/000/002/0057/0060
CIRC ACCESSION NO—AP0109585
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109585

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. 95 PATIENTS WERE INVESTIGATED IN THE DYNAMICS OF THE DISEASE. AN AUTHENTIC INCREASE OF THE HISTAMINE LEVEL IN THE BLOOD WAS MARKED AND THE LATTER WAS PARALLEL TO THE SERVERITY OF THE AFFECTION. CLINICAL RECOVERY WAS PRIOR TO NORMALIZATION OF THE HISTAMINE CONTENT IN THE PATIENTS.

UNCLASSIFIED

USSR

VERSHIGORA, A. Ye., DYACHENKO, S. S., LISUNKINA, I. K., MORGUNOV, I. N.,
NOGACHEVSKIY, I. I., TEREKHOV, S. N., CHERNUSHENKO, Ye. F., and YAGUD, S. L.,
Editors, Ministry of Health, Ukrainian SSR

Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology.
Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

Translation: Annotation: Articles included in the collection deal with the most pressing problems of theoretical and practical immunology, viz., mechanism of the formation of antibodies and immunological reactivity, allergy and clinical and experimental immunopathology, specific prophylaxis, and reactogenicity of vaccines and postvaccinal complications. Works aimed at devising methods of immunological investigations help to solve problems of modern immunology.

The previous four issues of this collection were published under the title of "Voprosy Immunologii" (Problems of Immunology).

The collection is of interest to scientific workers, practitioners of various specialties, and to senior students of medical institutes.

191 pages. 52 Russian articles with Russian abstracts.

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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USSR

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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10/10

- 93 -

1/2-5 010 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THERMAL MAGNETIC PULSE METAL PROCESSING -U-
AUTHOR-(03)-BRON, O.B., YEPECHURIN, V.P., VERSHILOV, YU.I.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, KUZNECHNO-SHTAMPOVOCHNOYE PROIZVODSTVO, NO. 2, 1970, PP
12-14
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MATERIALS, MECH., IND.,
CIVIL AND MARINE ENGR
TOPIC TAGS--MAGNETIC FIELD EFFECT, METALLURGIC FURNACE, ELECTRIC FURNACE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0264 STEP NO--UR/0182/70/000/002/0012/0014
CIRC ACCESSION NO--AP0100774
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0100774
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. THIS ARTICLE DESCRIBES A DEVICE WHICH COMBINES HIGH FREQUENCY HEATING WITH STRONG MAGNETIC FIELD PULSES FOR THE PURPOSE OF PROCESSING METALS BY PRESSURE. IN MOST MACHINES OF THIS TYPE, A MAGNETIC INDUCTION IN THE AIR GAP BETWEEN THE INDUCTOR AND THE SPECIMEN OF UP TO 100 WEBERS-M PRIME2 IS OBTAINED; THE RESULTING PRESSURE ON THE SPECIMEN IS THEREFORE INSUFFICIENT. THE DEVICE DESCRIBED IN THIS ARTICLE RECTIFIES THIS DEFICIENCY BY HEATING THE SPECIMEN BEFORE THE PROCESSING, A METHOD KNOWN AS THERMAL MAGNETIC PULSE METAL PROCESSING. THE INDUCTOR HERE PERFORMS A DOUBLE FUNCTION: IT HEATS THE SPECIMEN WITH HIGH FREQUENCY CURRENTS, AND CARRIES PULSED DISCHARGE CURRENTS FOR THE REQUIRED MAGNETIC FIELD PULSES. A CIRCUIT DIAGRAM OF THE DEVICE IS GIVEN. IT COMBINES THE CIRCUIT OF THE ORDINARY DEVICE PLUS A HIGH FREQUENCY OSCILLATOR OF 45 KILOVOLT AMPERES WITH A VOLTAGE OF 500 AND A FREQUENCY OF 10 KHZ. DRAWINGS OF THE SYSTEM OF WATER COOLING REQUIRED FOR THE INDUCTOR ARE SHOWN, TOGETHER WITH CURVES ILLUSTRATING THE DEFORMATION OF THE SPECIMEN AS A FUNCTION OF THE TEMPERATURES DEVELOPED BY THE DEVICE. THE AUTHORS CONCLUDE THAT THE METHOD OF THERMAL MAGNETIC PULSE CREATES THE CONDITIONS NECESSARY FOR A NUMBER OF ENGINEERING OPERATIONS DIFFICULT TO ATTAIN BY OTHER METHODS.

UNCLASSIFIED

USSR

UDC 616.981.42-092.9-07:616.15-097.5

VERSHILOVA, P. A., CHERNYSHEVA, M. I., KNYAZEVA, E. N., and DRANOVSKAYA, Ye. A.,
Institute of Epidemiology and Microbiology imeni Garaleya, Academy of Medical
Sciences USSR, Moscow

"A Study of the Preventive and Opsonic Activity of IgM- and IgG-Antibodies in
Experimental Brucellosis Infection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973,
pp 37-40

Abstract: The preventive activity of IgM- and IgG-antibodies obtained from
guinea pigs 15 days to 18 months after infection by Br. melitensis was assessed
by injecting whole serum and separate immunoglobulin fractions into white mice
and subsequently infecting them with Br. melitensis. Opsonic activity was
determined by the degree to which serum and immunoglobulin fractions activated
neutrophils. Preventive activity of the immunoglobulin fractions followed the
pattern of the quantity of antibodies, chiefly hemagglutinins, contained within
them. Antibody quantity and preventive activity of the IgM fraction increased
from the 15th day, peaked at 1-2 months and then dropped for the remaining
period of observation, while those of the IgG fraction arose 20 days later
than in the IgM fraction and persisted throughout the remaining period.

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USSR

VERSHILOVA, P. A., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 37-40.

Neutrophil activity of serum rose from 8-16% in the first 15 days to 26-40% after 2-6 months, and then dropped for the remaining period. While the IgM fraction displayed no opsonic activity, the activity of the IgG fraction followed the pattern of activity displayed by serum. Thus it is shown that IgG-antibodies dominate in protecting guinea pigs from brucellosis infection.

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USSR

UDC 616.981.42

VERSHILOVA, P. A., and GOLUBEVA, A. A.,

Brutsellez v SSSR i Puti Yego Profilaktiki (Brucellosis in the USSR and Ways to Prevent It), Moscow, "Meditsina", Moscow, 1970, 192 pp

Translation: Foreword: This book is devoted to the study of brucellosis in the USSR and the fight against it. Literature data and epidemiological surveys of brucellosis are presented in the book. The authors' main task is to present the epidemiological features of brucellosis in the USSR, current achievements in the fight against it, and the direct of measures for further curtailing this infection in the nation. Veterinary scientists and specialists have made a great contribution to the problem of studying and working out methods and ways to eradicate brucellosis among livestock. This has been reflected in numerous corresponding publications, and therefore in the present book the task of providing complete information on this subject has not been set. Brucellosis has been studied as an independent disease since 1860. However, the history of the study of brucellosis in the Soviet Union began in the first decade after the Great October Socialist Revolution. Systematic and in-depth study of this infection was started for human beings (P. F. Zdrodovskiy) and livestock (S. N. Vyshellesskiy) as early as the 1920's. The following stage is characterized by

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VERSHILOVA, P. A., et al, "Meditsina", Moscow, 1970, 192 pp

determination of the distribution of brucellosis among animals and human beings for the nation and individual republics. Organization of the network of anti-brucellosis stations was of decisive importance in the fulfillment of this task. The attack on brucellosis that was started during these years at foci of infection and the opening up of scientific research work in specialized laboratories created the prerequisites for implementing measures for eliminating brucellosis foci. During the difficult years of the Great Patriotic War and the first postwar period, the situation with respect to brucellosis worsened considerably in this country. Brucellosis acquired great importance in livestock-breeding regions. Great efforts were required on the part of scientists and practicing veterinarians in order to seek out the most effective measures for controlling this serious disease and to prevent it from becoming widespread. Based on the achievements of science and practice, fulfillment of the task of eliminating brucellosis among livestock, primarily among cattle as the source of brucellosis most dangerous to man, became practicable. With the support of Soviet and party organs, persistent implementation of antibrucellosis measures worked out by science and practice led to considerable reduction of foci of infection and cases of brucellosis in humans, which is reflected in the materials presented. Data of investigations by domestic scientists on immunity, vaccinal

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VERSHILOVA, P. A., et al, "Meditsina", Moscow, 1970, 192 pp

immunogenesis, and vaccinal strains proposed for inoculation against brucellosis are presented as a separate section in the book. Problems of brucellosis prevention are illuminated on the basis of the considerable scientific work and practical experience of many scientists and specialists of the nation's practicing veterinary and medical service, and instructional materials that have the force of law. Creation in 1939 of a special inspectorship for brucellosis in the USSR Ministry of Health and the ministries of some Union republics had great positive significance in organizing the study and implementation of antiepidemic measures for brucellosis. The authors of the book considered it their duty to summarize years of materials on the divisions of the problem of brucellosis listed, and also to reflect the results of the work of the enormous collective of Soviet medical and veterinary service. In connection with this, we believe that the present book cannot exhaust all aspects of studying and ways of combatting brucellosis, but we hope that it will be useful to those who continue their activity in this field.

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USSR

UDC 616.981.42-07:616.153.962.4-097-01

V
VERSHILOVA, P. A., CHERNYSHEVA, M. I., and KNYAZEVA, E. N., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Characteristics of Immune Globulins in Brucellosis and After Vaccination"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 100-105

Abstract: Studies on the dynamics of microglobulin and macroglobulin production in guinea pigs vaccinated and infected with Brucella were conducted. Antibodies were determined by the agglutination and indirect hemagglutination reactions at various intervals until 12 months after the start of the experiment. Sera were treated with cysteine to detect the antibodies. Macroglobulins (19S, IgM, (M) appeared after about two weeks in both vaccinated and infected animals. Microglobulins (7S, IgG, (G) appeared in the third week, against a background of maximum antibody production. Antibody titers did not exceed 1:160 in vaccinated animals, but reached 1:1280-1:2560 in infected animals. The infectious process was characterized by high microglobulin titers throughout the observation period (12 months). The indirect hemagglutination reaction was more sensitive than the agglutination reaction in detecting microglobulins in cysteine-treated sera.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CELLULAR AND HUMORAL INDICES OF VACCINAL IMMUNOGENESIS IN
BRUCELLOSIS -U-
AUTHOR-(02)-VERSHILOVA, P.A., CHERNYSHEVA, M.I.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 77-80
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--IMMUNITY, BRUCELLOSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0094 STEP NO--UR/0016/70/000/005/0077/0080
CIRC ACCESSION NO--AP0114490
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114490

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER TREATS OF IMMUNOLOGICAL REACTIVITY OF THE ORGANISM IN FORMATION OF VACCINAL IMMUNITY IN BRUCELLOSIS. IN PARTICULAR, A STUDY WAS MADE OF THE ROLE PLAYED BY CELLULAR AND HUMORAL INDICES IN THE RESISTANCE OF THE ORGANISM TO INFECTION WITH THE VIRULENT CULTURE. THERE WAS ESTABLISHED A CORRELATIVE DEPENDENCE BETWEEN THE OPSONIC AND PREVENTIVE ACTIVITY OF THE SERUM; ACTIVATION OF PHAGOCYTTIC PROCESSES IN THE RETICULOENDOTHELIAL ELEMENTS AND THE STATE OF IMMUNITY. FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GMALEI AMN SSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 576.851.42.07

VERSHILOVA, P. A., DRANOVSKAYA, Ye. A., and KUSHNAREV, V. M., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, and Moscow Institute of Vaccines and Sera imeni Mechnikov

"A Supplementary Method of Identifying Bacteria Belonging to the Genus Brucella"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 98-101

Abstract: The spectrophotometric method is recommended for identification of both typical and atypical brucella strains. Like the classic brucellosis pathogens (*melitensis*, *abortus*, and *suis*), the atypical strains (*Br. suis* biotype 4, No 481, 03, 0, 11) collected from northern deer; *Br. neotomae* strains No 63/1, 66/2, and 65/197; *Br. ovis* No 64 isolated in the USSR and No 63/90 obtained from England; *Br. canis* No 666 obtained from the U.S.; and three strains isolated from mouse-like rodents in the USSR and presumed to be *Br. murium* No 1, 6, and 68) have distinct absorption peaks in the alpha and beta bands of cytochrome c. Characteristically, *Br. canis* isolated from deer and strains isolated from mouse-like rodents display shifts to the right in the alpha (554-560 mμ) and beta (524-530) absorption peaks of cytochrome c, while strains isolated from deer, *Br. neotomae*, and *Br. ovis* also have distinct cytochrome a absorption bands (620-630).

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USSR

VERSHILOVA, P. A., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii,
No 12, 1972, pp 98-101

Other gram-negative bacteria (Salmonella, Escherichia, and Fr. tularensis) have different spectrophotograms in which cytochrome b absorption peaks predominate. It is recommended that the method be used for differential diagnosis of bacterial samples and that the presence of cytochrome c be specified in the taxonomic description of the genus Brucella.

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87562

S/019/60/000/014/130/196/KX

A152/A026

9.4310 (3203, 1143, 1160)

AUTHORS: Vershin, V.Ye., and Zhivulin, Ye.K.

TITLE: A Method for Measuring High-Frequency Transistor Parameters

PERIODICAL: Byulleten' izobreteniy, 1960, No. 14, p. 28

TEXT: Class 2lg, 11⁰². No. 130119 (626355/26 of 24 Apr 59). 1. This is a method distinguished by its simplicity and automation of measurements. The transistor triode being measured is fed with a reference square pulse and the latter is compared with a pulse taken up from the tested transistor's collector load. The unknown parameter is then determined from the data obtained. 2. The accuracy of measurements is increased and the above process is automated by using a stabilivolt in the capacity of the pulse detector. This stabilivolt is coupled with a measuring instrument with an indicator. The type of conductivity of the transistors is determined, the latter are checked for absence of short-circuit and assorted according to power by means of a relay unit that switches the voltages being connected up to the transistor and those being taken up from its output.

Card 1/1

VERSHIN, V. Ye.

84171

9.3220

S/019/60/000/013/026/112
A152/A029

AUTHOR: Vershin, V. Ye.

TITLE: A Pulse-Forming Device

PERIODICAL: Byulleten' izobreteniy, 1960, No. 13, p. 26

TEXT: Class 21a¹, 36. No. 129673 (640259/26 of October 1, 1959). This device for the above-specified purpose forms pulses of various duration and incorporates a non-linear switching and a reactive storage element. It has the following special feature: the non-linear element in the form of a semiconductor stabilizer is series-connected with the load and parallel-connected up into the reactive storage element. ✓

Card 1/1

Aeronautical

USSR

UDC:629.78.018.1

VERSHININ, I. D.

"Experimental Determination of Dependence of Flow Intensity in a Molecular Wind Tunnel on Stagnation Temperature"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, 4, No 3, pp 127-129
(Translated from Referativnyy Zhurnal Raketostroyeniye, No 11, 1973, Abstract No 11.41.105, from the resume)

Translation: The primary parameters of the stream in a molecular wind tunnel are the intensity (that is the number of molecules intersecting a unit surface area perpendicular to the stream per unit time) and the mean velocity. Extensive experimental material has been accumulated on the influence of various factors on these parameters. However, most works which have produced this material have been performed without heating of the gas in a prechamber, that is at room stagnation temperature. However, it is obvious that by increasing the stagnation temperature, one can increase the mean flow velocity in a molecular wind tunnel. Furthermore, preliminary

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VERSHININ, I. D., Uch. Zap. Tsentr. Aerogidrodinam. In-tz, 1973 4, No 3, pp 127-129

heating of the gas is necessary to prevent condensation in the initial sector of the molecular tunnel -- in the supersonic stream exhausting into the vacuum. Therefore, the question arises of the influence of stagnation temperature T_0 on the intensity of the stream in a molecular wind tunnel.

Results are presented from experimental determination of the dependence of intensity of the stream in a molecular wind tunnel on distance between the nozzle and the skimmer at various stagnation temperatures (293-1033° K), and it is shown that with unchanged flow rate through the nozzle, an increase in the stagnation temperature leads to a significant increase in the intensity of the stream.

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USSR

UDC 547.26'118.07

VERSHININ, P. V., ALPATOVA, R. I., SAMOYLOVA, A. N.

"A Method of Purifying Commerical Butyphos"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 15, Apr 73, Author's Certificate No 374323, Div C, filed 12 Jan 71,
published 20 Mar 73, p 52.

Translation: This Author's Certificate introduces: 1. A method of purifying
commerical Butyphos with the distinguishing feature that the quality of
the finished product is improved by treating commerical Butyphos with super-
heated steam. 2. A modification of this method distinguished by the
fact that the process is carried out at atmospheric pressure and at 100-
110° C. 3. A modification of the method covered in point 1, distinguished
by the fact that the process is carried out at a pressure of 50-100 mm Hg
at 60-100° C.

1/1

USSR

UDC: 669.187.2

KRASNOYADTSEV, N. N., LEVIN, A. M., GLAZOV, A. N., PASHCHENKO, V. Ye.,
KONOVALOV, K. N., VERSHININ, V. I.

"Decreasing the Loss of Titanium During Production of Stainless Steel"

Moscow, Metallurg, No 10, Oct 73, pp 18-19.

Abstract: Balance melts performed in a 40 ton arc furnace at the Kuznetsk Metallurgical Combine have shown that when type Kh18N10T stainless steel is produced by the ordinary technology (using up to 70% of waste of this type of steel in the charge, blowing of oxygen through the bath, running off of slag at the end of the melt and introduction of new lime and spar, alloying with 30% ferrotitanium in the furnace), the titanium losses are approximately as follows: 56% by interaction with oxides, 13% with oxygen and nitrogen in the metal, 27% with oxygen in the air, other losses 4.0%. Replacement of 30% ferrotitanium with 65% and alloying the metal in the ladle rather than in the furnace reduced the mean titanium loss from 57.0 to 52.0%. Several series of experimental melts were performed to find additional means of reducing and stabilizing titanium loss, without success. Success was finally achieved by modifying the technology quite basically. The primary features of the new technology are that the slag is not run

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USSR

Krasnoryadtsev, N. N., Levin, A. M., Glazov, A. N., Pashchenko, V. Ye.,
Konovalov, K. N., Vershinin, V. I., Moscow, Metallurgy, No 10, Oct 73, pp
18-19.

off from the furnace after melting of the ferrochromium, but rather poured into the ladle with the metal at a high temperature (averaging about 1640° C), reducing the length of the reduction period and increasing the degree of reduction of chromium from the slag. The metal is poured from the first ladle into a second ladle through a tap hole 100-110 mm in diameter, and alloyed with 65% ferrotitanium in the second ladle, preventing contact between titanium and slag. Titanium loss was further reduced from 52 to 40.9% by the new technology, and the stability of the titanium content was increased.

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USSR

UDC 669.187.2

VERSHININ, V. I., LEVIN, A. M., GLAZOV, A. N.,
KRASNORYADTSEV, N. N., and PASHCHENKO, V. Ye., Kuznetsk Metal-
lurgical Combine and Siberian Metallurgical Institute

"Alloying Steel With Aluminum in Pouring From Ladle Into Ladle"
Moscow, Stal', No 6, Jun 73, pp 517-518

Abstract: Three smelting variants of manganese-aluminum steel were investigated in order to determine the most optimum variant. The investigation results are discussed by reference to curves of the magnesium content (in %) dependence on periods of smelting and pouring. Smelting manganese-aluminum steel without drawing off the slag, with double pouring over and alloying with aluminum in the second ladle, makes it possible to get in the ready-made metal in the average 0.0024% Mg; this decreases the melting duration by 15-20 min and reduces the waste due to stratification. By the standard technology with aluminum alloying in the ladle,

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USSR

VERSHININ, V. I., et al., Stal', No 6, Jun 73, pp 517-518

the steel contains 0.0076% Mg; by introducing aluminum into the furnace it contains 0.011% Mg. Other quality characteristics, as mechanical properties, purity of the surface, homogeneity of the metal relative to aluminum and other elements, are practically identical in smelting by all variants and satisfying the technological requirements. Two figures, seven bibliographic references.

2/2

1/2 007
UNCLASSIFIED
TITLE--SOLUBILITY OF ALPHA NAPHTHOL, SEVIN, AND CD RAL IN VARIOUS SOLVENTS
-U-
AUTHOR--(02)-VERSHINIA, N.D., LITOVCHENKO, G.D.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 255-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLUBILITY, ORGANIC SOLVENT, HETEROCYCLIC OXYGEN COMPOUND,
NAPHTHOL, CHLORINATED ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0470
STEP NO--UR/0076/70/044/001/0255/0256
CIRC ACCESSION NO--AP0107076
UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0107076

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. DATA ARE TABULATED FOR SLPHA
NAPHTHOL IN CCL SUB4, CHCL SUB3, AND (CHCL SUB2) SUB2, OF SEVIN (1
NAPHTHYL METHYLCARBAMATE) IN CCL SUB4, CHCL SUB3, (CHCL SUB2) SUB2,
BENZENE, TOLUENE, AND MECH; AND OF 7 CO RAL (I) IN ME SUB2 CO, ETOH, AND
ETOAC AT 0-70DEGREES, 0-80DEGREES, AND 0-50DEGREES, RESP.

UNCLASSIFIED

USSR

VERSHININ, B. A.

UDC: 531.55:521.1

"Concerning Nutational Oscillations of a Variable-Length Gyropendulum
With a System of Movable Points"

Sb. nauch. tr. Krasnoyarsk. politekhn. in-ta (Collected Scientific Works
of Krasnoyarsk Polytechnical Institute), 1971, No 10, pp 156-165 (from
RZh-Mekhanika, No 7, Jul 72, Abstract No 7A94)

Translation: The paper discusses a variable-length gyropendulum whose point of support moves with variable acceleration along a stationary axis parallel to a constant homogeneous gravitational field. The gyropendulum consists of a symmetric carrier gyroscope and a system of carried movable material points. The relative displacements of the carrier gyroscopic points are such that the principal axes of inertia of the carried material points, whose ellipsoid of inertia is an ellipsoid of revolution. The axis of proper rotation of the gyroscope is the central axis of the carrier and the carried points. An investigation is made of the special case where the projection of the kinetic moment of the carried material

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USSR

VERSHININ, B. A., Sb. nauch. tr. Krasnoyarsk. politekhn. in-ta, 1971,
No 10, pp 156-165

points on the axis of proper rotation of the carrier gyroscope is a function of time, while the projections of the kinetic moments of the carried points along the two remaining rectangular axes are equal to zero. A study is made of the limitations on the angles of nutation in spatial oscillation of the axis of the gyropendulum in the case of absence of initial angular velocity of precession of this axis. Bibliography of nine titles. Author's abstract.

2/2

USSR

UDC: 629.78.017.2

VERSHININ, B. A.

"On Comparison of two Control Laws in Problem of Fast Response"

Sb. nauch. tr. Krasnoyarsk. politekhn. in-t (Symposium of Scientific Works of Krasnoyarsk Polytechnic Institute) 1971, No 10, pp 166-172 (from Referativnyy Zhurnal-Raketostroyeniye, No 7, 1972, Abstract No 7.41.162)

Translation: Control law is considered, which can be used in high-order nonlinear systems of automatic control, represented by a system on ordinary differential equations; one of these equations has the form of Kinematic coupling:

$$\dot{\omega} = d\psi/dt = F(\psi).$$

The proposed control law

$$\omega = F(\psi) = \sqrt{\psi(a - \psi) \sum a_i \psi_i} (i \in \sigma, n)$$

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• USSR

VERSHININ, B. A., Sb. nauch. tr. Krasnoyarsk. politekhn. in-t, 1971, No 10, pp 166-172

brings the control system to ε neighborhood of the new position in the range of aperiodic transient motion with inequality type limitations of function ω and the modulus of its derivative with respect to time. The reduction of the system is conducted along a single coordinate ψ in the class of continuous and sufficiently smooth control functions. The main purpose of the proposed control law is the solution of a certain combination of motion control problems, which cannot be solved by the principle of maximum because of the complexity of the system. It is of interest, however, to compare numerically the solutions of a certain problem by the principle of maximum and by the proposed method. Such a comparison is presented in the article for a specific mechanical system, as an example. It turns out that the increase in the duration of system's transient motion due to the use of more narrow class of control, as compared to the control corresponding to the principle of maximum, is practically small. This forms the ground for the significance of the application of the proposed control law (1 illustration, 14 references, resume).

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1/2 028
UNCLASSIFIED
TITLE—RADIOPHYSICAL RESEARCHES IN THE AURORAE ZONE —U— PROCESSING DATE--09OCT70
AUTHOR—(05)—PONOMAREV, YE.A., SVERDLOV, YU.L., PYATSI, A.KH., VERSHININ, /
YE.F., TSIRS, G.P.
COUNTRY OF INFO—USSR
SOURCE—RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 5-11 ✓
DATE PUBLISHED-----70
SUBJECT AREAS—ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES
TOPIC TAGS—AURORA, RADIO EMISSION, UPPER ATMOSPHERE, SOLAR ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/0070 STEP NO--UR/3307/70/000/019/0005/0011
CIRC ACCESSION NO--AP0114466
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114466

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DRAWS CERTAIN CONCLUSIONS AS THE RESULT OF RADAR RESEARCHES ON UHF AND SHF, AS WELL AS CONTINUOUS ULF ON THE RADIO EMISSION OF AURORAE AND THE UPPER ATMOSPHERE IN THE AURORAE ZONE, CARRIED OUT IN THE SOVIET UNION. THE PAPER PRESENTS PRELIMINARY RESULTS OF COMPARISON OF PHENOMENA IN THE PERIOD OF THE MAXIMUM AND MINIMUM OF SOLAR ACTIVITY.

UNCLASSIFIED

1/2 032
UNCLASSIFIED
TITLE--CRYSTALLOGRAPHIC DIRECTIVITY OF THE PULSED DIELECTRICS IN A SHARPLY HETEROGENEOUS FIELD -U-
AUTHOR--(02)-VERSHININ, YU.N., TRIPPEL, V.G.
PROCESSING DATE--18SEP70
BREAKDOWN OF SOLID
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 296-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTALLOGRAPH, DIELECTRICS, CALCIUM COMPOUND, QUARTZ CRYSTAL,
DIELECTRIC BREAKDOWN, GEM, ALUMINUM COMPOUND, FLUORINE COMPOUND, SILICON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY -CEL/FRAME--1980/0095
STEP NO--UR/0181/70/012/001/0296/0298
CIRC ACCESSION NO--AP0048387
UNCLASSIFIED

2/2 032

CIRC ACCESSION NO--AP0048387

UNCLASSIFIED

PROCESSING DATE--19SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRYSTALLOGRAPHIC DIRECTIVITY WAS INVESTIGATED OF THE BREAKDOWN CHANNEL IN CRYSTALS OF HALITE, CALCITE, QUARTZ, AND TOPAZ, WHICH DIFFER FROM EACH OTHER BY THE TYPE OF LATTICE AND ANIONS. IN HALITE CRYSTALS, CL PRIME NEGATIVE FORM A DISCONTINUOUS SERIES IN THE DIRECTION OF FACE DIAGONAL OF THE UNIT CELL. THEY ALSO FORM, NORMAL TO THE 3 FOLD AXES OR BODY DIAGONALS, LAYERS BETWEEN WHICH IN THE OCTAHEDRAL VOIDS ARE LOCATED SMALLER CATIONS. THESE DIRECTIONS SHOULD PREVAIL UNDER THE CONDITIONS OF ELEC. BREAKDOWN. THE UNIT CELL IN CALCITE CRYSTALS CAN BE REPRESENTED AS THE UNIT CELL OF HALITE DISTORTED BY COMPRESSION ALONG THE 3 FOLD AXIS, AND NA PRIME POSITIVE AND CL PRIME NEGATIVE LOCI ARE OCCUPIED BY CA PRIME² POSITIVE AND CO SUB3 NEGATIVE. THE PREVAILING DIRECTIONS OF BREAKDOWN SHOULD COINCIDE WITH THE SMALLER DIAGONAL OF THE FACE OF A RHOMBOHEDRON, AND ALSO WITH A 3 FOLD AXIS, UNIQUE IN THE STRUCTURE OF CALCITE. IN THE QUARTZ CRYSTAL, ZIG ZAG CHAINS OF SI TETRAHEDRA ARE LOCATED ALONG THE DIAGONALS OF SIDE FACES AND THE SHORTEST BODY DIAGONAL. THE STRUCTURE OF TOPAZ REPRESENTS AN AGGREGATION OF COLUMNS OF AL OCTAHEDRA (ALG SUB4(OH,F) SUB2) STRETCHED ALONG THE C AXIS AND JOINED TO EACH OTHER BY SI TETRAHEDRA. THE PREVAILING DIRECTION OF THE DISCHARGE SHOULD COINCIDE WITH THE C AXIS.

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0138215
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THERMOLYSIS OF (NH₄OH)(H SUB2 O)
SUBX (SO SUB4 (I), (NO SUB2(OH) SUB4(H SUB2 O) SUBY) SO SUB4, AND NO(OH)
SUB3 GIVES NO SUB2 O SUB3 AS THE FINAL PRODUCT. IR SPECTRA OF STARTING
MATERIALS AND OF INTERMEDIATE PRODUCTS ARE GIVEN. THE RELATIVE STRENGTH
OF BANDS AND COORDINATION NOS. OF THESE SPECIES ARE DISCUSSED. A NEW
SPECIES, NO SUB2 O(SO SUB4) SUB2, FORMED AS AN INTERMEDIATE DURING THE
THERMOLYSIS OF I.

UNCLASSIFIED

1/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--INFRARED SPECTRA OF NORMAL SULFATES AND OF OXIDE SULFATES OF
COPPER, ZINC, CADMIUM, AND MERCURY -U-

AUTHOR--(03)--SHOKAREV, M.M., VERSHININA, F.I., MARGULIS, YE.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 151-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER COMPOUND, ZINC, CADMIUM, MERCURY, SULFATE, IR SPECTRUM,
PYROLYSIS, METAL OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/0920

CIRC ACCESSION NO--AP0116430

STEP NO--UR/0192/70/011/001/0151/0154

UNCLASSIFIED

2/2 024
 CIRC ACCESSION NO--AP0116430
 ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED
 PROCESSING DATE--16OCT70
 ABSTRACT. THE IR SPECTRA OF CUSO SUB4, ZNSO SUB4, CDSO SUB4, HGSO SUB4, CUO.CUSO SUB4, ZNO.2ZNSO SUB4, 2CDO.CDSO SUB4, AND 2HGO.HGSO SUB4 WERE RECORDED AT 2000-400 CM PRIME NEGATIVE1. THE OXIDE SULFATES OF CU, ZN AND CO WERE PREPD. BY PYROLYSIS OF THE SULFATES AT 680, 700, AND 920DEGREES, RESP. THE SAMPLES FOR IR EXAMN. WERE PREPD. AS VASELINE OIL MULLS OF THE FINELY POWD. SALTS. THE FOLLOWING FREQUENCIES WERE SELECTED FOR SULFATE DETN. IN OXIDE SULFATES: FOR CU SUALTS 708 AND 628, ZN 601 AND 542, CO 674 AND 618, AND HG 648 AND 598 CM PRIME NEGATIVE1. THE SENSITIVITY OF THE METHOD WAS SIMILAR TO 5PERCENT. FACILITY: VSES, NAUCH.-ISSLED. GORNOMET. INST. TSVET. MET., UST-KAMENOGORSK, USSR.

UNCLASSIFIED

Acc. Nr. **APO053890** - Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

UR0028

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-116306v Cadmium hydroxide and hydroxosulfates, and products of their thermolysis. Margulis, E. V.; Shokarev, M. M.; Beiseketva, L. I.; Vershinina, E. N. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 374-9 (Russ). The title compds. were studied by using x-ray diffraction, ir spectrophotometry, DTA and thermal gravimetry. In the investigated sulfates, SO_4^{2-} has D_2 symmetry and is coordinated to 4 Cd^{2+} . The splitting of $\nu(\text{SO}_4)$ implies that the strength of the crystal field decreases with the compds. in the order: $\text{CdSO}_4 > 2\text{CdO} \cdot \text{CdSO}_4 > \text{CdSO}_4 \cdot \text{Cd}(\text{OH})_2 > \text{CdSO}_4 \cdot n\text{Cd}(\text{OH})_2$. Ir spectra of hydroxosulfates are very complex due to interactions of $\nu \text{ OH}$ with lattice frequencies and due to various natures of the OH present. Thermal stability of hydroxo compds. decreases in the order: $\text{CdSO}_4 \cdot \text{Cd}(\text{OH})_2 > \text{CdSO}_4 \cdot n\text{Cd}(\text{OH})_2 > \text{Cd}(\text{OH})_2$.
HMJR
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REEL/FRAME
19830967

18

USSR

UDC 535.317.2

VERSHININA, L. N., and SHEVCHENKO, V. V., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR, Moscow

"Quasioptical Channels for the Submillimeter Wave Band"

Moscow, Pribery i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 147-149

Abstract: This paper describes quasioptical submillimeter transmission channels of two types: a confocal lens-type light-guide line based on non-reflecting lenses, and a diaphragmatic light guide made up of iris diaphragms. The lines are constructed in such a way that they can transmit only the fundamental wave mode. The results of experimental measurements of the parameters of the transmission lines are presented. Spectrometers for the submillimeter band were constructed on the basis of the lens-type transmission line. These spectrometers were used for studying the absorption spectra of various solid and liquid dielectrics. The proposed quasioptical lines can be used in various other types of physical research. The authors thank V. V. Meriakri for assistance with development of these transmission lines.

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USSR

UDC: 621.317.77(088.8)

VERSHININA, L. N., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR

"A Device for Measuring Phase in the Millimeter Wave Band"

USSR Author's Certificate No 267751, filed 21 Aug 67, published 23 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No. 1A319 P)

Translation: This Author's Certificate introduces a device for measuring phase in the millimeter wave band. The device contains two reception channels and a double T-bridge with a detector head and matched load in the side legs. As a distinguishing feature of the patent, measurement precision is improved by making one of the reception channels in the form of a 90° waveguide twist with controllable attenuator and connecting this channel to the E-branch of a tee, while the other channel is made in the form of a 90° waveguide E-bend which also has a controllable attenuator and is connected to the H-branch of the tee. E. L.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--KINETICS OF SOME ELECTRODE PROCESSES ON A CONTINUOUSLY RENEWED
SURFACE OF SOLID METAL -U-
AUTHOR--(02)-TOMASHOV, N.D., VERSHININA, L.P.
COUNTRY OF INFO--USSR
SOURCE--ELECTROCHIM. ACTA 1970, 15(4), 501-17
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--METAL ELECTRODE, METAL DIFFUSION, ELECTROCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1099 STEP NO--UK/0000/70/015/004/0501/0517
CIRC ACCESSION NO--AP0123001
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123091

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF CONTINUOUS MECH. RENEWAL (SCOURING) OF THE WHOLE REACTION SURFACE OF A SOLID METAL ELECTRODE WAS USED FOR INVESTIGATION OF THE KINETICS OF VARIOUS CHARACTERISTIC ELECTRODE PROCESSES. CATHODIC PROCESSES OF H EVOLUTION ON PD, NI, FE, PB, SN, O IONIZATION ON PD, ACTIVE ANODIC DISSOLN. (FE, NI, PB, SN), ANODIC PASSIVITY (TI, CR, NI), AS WELL AS THE EFFECT OF ADSORPTION OF SURFACE ACTIVE ANIONS ON THE KINETICS OF ELECTRODE AND CORROSION PROCESSES ON FE AND NI, WERE STUDIED. DIFFUSION INHIBITION OF AN ELECTRODE PROCESS IS ELIMINATED BY VIGOROUS STIRRING OF THE SOLN. VIGOROUS MECH. SURFACE RENEWAL DEPENDING ON THE NATURE OF THE IONS BEING ADSORBED, THEIR CONCNS., AND ELECTRODE POTENTIAL. INHIBITION OF THE ELECTRODE REACTION DUE TO THE CHARGE TRANSFER RATE IS NOT ELIMINATED BY MECH. SURFACE SCOURING. COMPARISON OF KINETICS OF ELECTRODE PROCESSES WITH OR WITHOUT CONTINUOUS RENEWAL OF THE METAL ELECTRODE SURFACE ALLOWS A QUANT. EVALUATION OF THE DEGREE OF INHIBITION OF THE TOTAL ELECTRODE PROCESS BY ITS INDIVIDUAL STEPS. FACILITY: INST. PHYS. CHEM., MOSCOW, USSR.

UNCLASSIFIED

USSR

SUDAKOV, N. I., VERSHININA, N. I., DROKIN, A. I., and URSULYAK, N. D., Krasnoyarsk Institute of Nonferrous Metals imeni M. I. Kalinin, Krasnoyarsk State University

"Magnetic Anisotropy of Bismuth-Calcium-Iron-Vanadium Garnets"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 1077-1081

Abstract: The variation of the crystallographic magnetic anisotropy constant K_1 of single crystal samples of ferrite garnets with the field and temperature was measured by the mechanical moment method. Some of the samples had an addition of gallium and aluminum ions; a list of the composition of the samples follows:

No of sample	Composition
1	$\text{Bi}_{0.12}\text{Ca}_{0.88}\text{Fe}_{0.88}\text{V}_{0.12}\text{O}_{12}$
2	$\text{Bi}_{0.25}\text{Ca}_{0.75}\text{Fe}_{0.88}\text{V}_{0.12}\text{O}_{12}$
3	$\text{Bi}_{0.38}\text{Ca}_{0.62}\text{Fe}_{0.88}\text{V}_{0.12}\text{O}_{12}$
4	$\text{Bi}_{0.51}\text{Ca}_{0.49}\text{Fe}_{0.88}\text{V}_{0.12}\text{O}_{12}$
5	$\text{Bi}_{0.64}\text{Ca}_{0.36}\text{Fe}_{0.88}\text{V}_{0.12}\text{Al}_{0.08}\text{O}_{12}$
6	$\text{Bi}_{0.77}\text{Ca}_{0.23}\text{Fe}_{0.88}\text{V}_{0.12}\text{Al}_{0.08}\text{O}_{12}$
7	$\text{Bi}_{0.90}\text{Ca}_{0.10}\text{Fe}_{0.88}\text{V}_{0.12}\text{Al}_{0.08}\text{O}_{12}$
8	$\text{Bi}_{0.12}\text{Ca}_{0.88}\text{Fe}_{0.88}\text{V}_{0.12}\text{Ga}_{0.08}\text{O}_{12}$
9	$\text{Bi}_{0.25}\text{Ca}_{0.75}\text{Fe}_{0.88}\text{V}_{0.12}\text{Ga}_{0.08}\text{O}_{12}$
10	$\text{Bi}_{0.38}\text{Ca}_{0.62}\text{Fe}_{0.88}\text{V}_{0.12}\text{Ga}_{0.08}\text{O}_{12}$

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USSR

SUDAKOV, N. I., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 1077-1081

Analysis of the curves of the mechanical moments in the (100) plane in samples of all composition showed that the curves of the moments have a clearly expressed periodicity of $\pi/2$ at room temperatures even for weak fields of 40 oersted. A change in the temperature leads to a change in the amplitude of the sine curve and a shift in the saturation fields. The addition of the diamagnetic ions Al^{3+} and Ga^{3+} produces an expressed dependence of K_1 on their content for a fixed quantity of vanadium ions: K_1 decreases with an increase in the aluminum and gallium content for all temperatures. The effect of the type of substitute ion on the anisotropy was difficult to estimate from the results of this study, since the experiments were conducted with different vanadium contents: $x = 1.22$ for the Al-substitute and $x = 1.29$ for the Ga-substitute. The following four conclusions were made: (1) K_1 for bismuth-calcium-iron-vanadium garnets is only slightly dependent on the composition. The introduction of additional diamagnetic Al^{3+} and Ga^{3+} ions considerably reduces its value. (2) The dependence $K_1(T)$ for all samples is qualitatively the same. K_1 is negative in the entire temperature interval studied and its value rises sharply with a drop in temperature. (3) The dependence of K_1 on the field for all samples is in agreement with

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USSR

SUDAKOV, N. I., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 1077-1081

theory. (4) The samples of Bi-Ca-Fe-V-garnets of basic and substitute compositions are not sensitive to heat and thermomagnetic treatments.

C/3

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VULCANIZATION OF UNSATURATED RUBBERS -U-

AUTHOR--(04)-DOGADKIN, B.A., DONTSOV, A.A., LOBACHEVA, G.K., VERSHININA,
N.M.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,062
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, RUBBER, PYRIDINE, IODINATED ORGANIC COMPOUND,
PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1411

STEP NO--UK/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128810

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A VULCANIZING AGENT, SUCH AS
ALLYLPYRIDINIUM IODIDE, WAS USED TO VULCANIZE UNSATD. RUBBERS IN THE
PRESENCE OF RADICAL INITIATORS. FACILITY: LOMONOSOV, M. V.,
INSTITUTE OF FINE CHEMICAL TECHNOLOGY, MOSCOW.

UNCLASSIFIED

91502a Flow of rubber mixtures through dies of varying length during extrusion. Guber, F. B.; Bartenev, G. M.; Rozenoer, I. N.; Verzhinina, O. Yu. (Nauch.-Issled. Inst. Rezin. Prom., Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 26-9 (Russ.). The flow of SKS-30 ARKM-15 and SKN-26M (I) rubber mixts. (contg. variable amts. of plasticizer and filler) through dies having a length-to-diam. ratio of 0.5-5.0 was studied. The flow of rubber mixts. through short dies at crit. pressures (which caused the accumulation of highly elastic deformation) was accompanied by elastic turbulence. The elastic turbulence was characterized by slippage of rubber mixts. through the extruder. The surface of the extrudate deteriorated and its diam. increased due to elastic turbulence. Increased content of carbon black (II) brought about improved surface quality and smaller extrudate diam., e.g., I filled with 40-60 parts II per 100 parts I exhibited markedly improved properties. Thus, the properties of the extrudates were mainly detd. by their elastic properties. The shrinkage of extruded mixts. was inversely proportional to the length of the extruder.

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19780046

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Acc. Nr

AP0045146

Abstracting Service:
CHEMICAL ABST.

Ref. Code

21R0138

91302a Flow of rubber mixtures through dies of varying
length during extrusion. Guber, F. B.; Bartenev, G. M.; Roze-
noer, I. N.; Varschinina, O. Yu. (Nauch.-Issled. Inst. Rezin. Prom-
Moscow, USSR). *Kauch. Rezin. Tekhn.*

Single Crystals

USSR

UDC 669.791:539.382

PUSTOVALOV, V. V., VERSHININA, V. V., TSIVINSKIY, S. V., and ALEKSANDROV, B. N.,
Physics Technical Institute of Low Temperatures, Academy of Sciences UkrSSR

"Plastic Deformation of Mercury Single Crystals"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 991-998

Abstract: Plastic deformation of mercury single crystals was studied by recording the extension curve at 77.3, 4.2, and 1.4-1.6°K. It was demonstrated that crystals of mercury have high plasticity down to very low temperatures (1.5-4.2°K). At 4.2 and 1.5°K, a multistage hardening curve was observed, which does not differ in principle from crystals with a different crystalline structure.

VERSHKOV, M.V.

Antennas

TECHNICAL TRANSLATION

PSIC-RT-23-357-73

ENGLISH TITLE: Magnetic Antennas

FOREIGN TITLE: Magnitnyye Antenny

AUTHOR: M. V. Vershkov

SOURCE: Chapter 7 of SUDOVYYE ANTENNY ("MARINE ANTENNAS"), Sudostroyeniye, 1972, pp. 247-283.

Translated for PSIC by Leo Kinner Associates, Redwood City, Ca. 94063

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USSR

UDC: 621.396.674.3

VERSHKOV, M. V.

"A Log-Periodic Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 273848, Division H, filed 15 Apr 68, published 30 Mar 72, p 242

Translation: This Author's Certificate introduces a log-periodic antenna made up of two structures whose longer-wave dipoles are bent at an angle of 90 degrees and have an inductive load at the corner break. The antenna also includes a feed line. As a distinguishing feature of the patent, the length of the antenna is reduced by making the dipole feed line shorter than $\lambda_{\min}/4$ and bending it back inside the antenna so that the structures take the form of a W.

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UDC: 621.396.677

USSR

VERSEKOV, M. V., YELISEYEV, A. A., KURILOV, I. N.

"A Log-Periodic Dipole Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 294543, Division H, filed 18 Oct 68,
published 30 Mar 72, p 242

Translation: This Author's Certificate introduces a log-periodic dipole antenna made up of two half-structures. As a distinguishing feature of the patent, the design is simplified by connecting a short-circuited line with an arm length of $(0.10-0.15)\lambda$ in the distribution line at a distance of $(0.20-0.25)\lambda$ from the feed points, where λ is the average wavelength of the band.

USSR

UDC: 621.396.673

VERSHKOV, M. V., YEVGRAFOV, V. D., ONISHCHENKO, T. A.

"A Short-Wave Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 285837, Division H, filed 11 Jul 69,
published 30 Mar 72, pp 241-242

Translation: This Author's Certificate introduces a short-wave antenna made in the form of a vertical dipole with capacitive loading. As a distinguishing feature of the patent, the working range is extended and losses are reduced by placing vertical rods of different heights around the circumference of the radiator.

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